

### Remarks

Claims 1-39 are pending in the above captioned application. Claims 1-6, 13-18, 25-30 and 37-39 stand rejected. Claims 7-12, 19-24 and 31-36 are objected to as depending from rejected claims.

The Abstract has been objected to as being too long. Applicants have amended the Abstract and respectfully request that based upon this amendment the Examiner withdraw the objection to the Abstract.

The specification has been objected to as not explaining how the invention works with two closely spaced modules. The specification in part states:

Turning now to Fig.'s 1 – 4 it can be seen that in operation the high voltage connector 32 is engaged and relatively snugly held in place within the interior passage 178 of the of the high voltage connector receptor 34. At the same time, the cable 36 is held within the high voltage input connector assembly 30 by a cable clamp 170, which frictionally engages the cable clamping sleeve 114 of the center tube 110. At the same time the center tube 110 is snugly fit within and frictionally engaging the interior surface of the elongated cylindrical passage 100 of the base tube 80, which in turn is connected to the housing front wall 26 by screws 118. Multilam (not shown) may also be employed to make electrical contact with the cable 37.

In this position of the high voltage connector assembly 30, the clamping protrusion 148 of the high voltage input connector clamp 140 is engaging the annular groove 130 in the inner tube 110, preventing the high voltage connector 32 from moving out from within the opening 178 in the high voltage connector receptor 32. In addition, a micro-switch 160 contact 162, extending through the window 98 in the base tube 80 engages the tapered outer surface 124 of the center tube 110.

When the module 20 is first to be installed and/or the operator desires to remove the module, the cable 36 and the high voltage connector assembly 30 will be in the position/or moved into the position shown in Fig. 4. In this position the high voltage connector 32 has been thrust through the opening 178 in the high

voltage connector receptor toward the rear wall 24 of the module 20. In order to do this, the operator (or alternatively at the factory before shipping) releases the clamp 140 from the annular groove 130 and pushes the inner tube 110 within the base tube 80 to a position, e.g., where the cable sleeve clamp 170 is abutting the clamp 140. In addition, with the clamp 140 out of the annular groove 130, the micro-switch 146 mounted on the module 20 front wall 26 is moved to a position to indicate the clamp 140 is disengaged from the annular groove 130 and also the micro-switch 160 spring loaded contact element 162 is in a position resting against the cylindrical outer wall 112 of the inner tube 110, also indicating that the cable is in a "housed" position, i.e., not in the operating electrical contact position. This micro-switch also may be utilized to give an indication that the annular groove 130 has passed by the micro-switch 160 toward the rear wall 24 of the module 20 and in the opposite direction during an engaging step in which the high voltage connector 32 is brought into electrically engaging contact with the high voltage connector receptor 34. alternatively, the cable 37 may be completely removed during shipment prior to first installation or after removal of the module 20 for maintenance, and inserted when the module 20 is first installed or replaced after maintenance, so that the cable 37 is in the thrust through position.

During such an engaging step, after the module 20 has been inserted or re-inserted, the inner tube 110 may be withdrawn through the base tube 80 in which it is snugly fit and frictionally engaging, but still slideably engaging the base tube, to a position where the clamp 140 again is in engagement with the annular groove 130 and the high voltage connector in turn is within the opening 178 of the high voltage connector receptor 32. It will be understood that an adjacent module, e.g., a commutator module may have an essentially identical arrangement as that shown in Fig.'s 1 – 14, with the modification, however, that when the cable 37 is moved from the "housed" position in the one module, e.g., the compression head module 20 of Fig.'s 1 – 14 the cable 37 with its own high voltage connector 32' (not shown) moves toward electrically connective contact with a high voltage connector receptor 34' (not shown, and both high voltage connectors 32 and 32' (not shown) are brought into electrically connective contact with the respective

high voltage contact receptor 34 and 34' (not shown) respectively by the same such movement of the cable 37.

In this manner a relatively thick and inflexible cable 37 may be used to interconnect two high voltage modules in relatively close proximity without bends of loops in the cable 37 which can lead to unwanted inductances and at the same time may be connected and disconnected from each other with relative ease with the modules installed in a cabinet having relatively close proximity and little flexibility of relative movement for purposes of connecting/disconnecting the cable ends to the respective module(s). (p. 7, line 3 – p. 9, line13)

Applicants respectfully submit that this contains an explanation according to an embodiment of the inventions disclosed and claimed in the above captioned application how the connector claimed in claims 1-36 works in conjunction with an adjacent module.

The Specification in addition goes on to state:

To add even more flexibility to the connecting/disconnecting process another embodiment of the present invention may be utilized, e.g., as shown in Fig.'s 15 – 17, a retractable connector 180 may be formed in the other module, e.g., a high voltage module, e.g., a commutator module 182. (p. 7, line 3 – p. 9, line 13 )

and further:

In operation, the retractable connector 180, when not in use may be in the housed position as shown, e.g., in Fig. 15, with the inner tube 210 retracted to essentially fully within the module 182. When electrical contact is desired, e.g., before the cable 36 has been moved into the contacting position, i.e., with the connector 32 engaged in the connector receptor 34, the retractable connector may be extracted from the module 182 by sliding the inner tube 200 through the base tube 190 until the high voltage connector 214 engages within a high voltage connector receptor 220, which may have within an interior cylindrical opening multilam frictional contacts 222. At this point also an annular stop ring 230 can be positioned on the end of the inner tube 210 so as to engage the interior end of the base tube, e.g., after passing through the interior opening of the connector receptor 220, thus establishing the extent of motion of the inner tube 200 in the

extension/connection direction. The annular stop ring 230 may also provide electrical field grading.

At this point, the coaxial cable 37 and connector 32 may be moved into engagement with the connector receiver 34 in the other module, extending the connector plug 250 toward the opening 204 in the extended retractable connector 180 allowing the connector plug 250 to be threaded into the receiving opening 216 to make the banana plug 246 with the banana plug receptor 224, establishing high voltage electrical connection between the modules with a minimum of relatively inflexible cable between the two, with a minimum bending or flexing of the cable during connection and with a minimum of bend and an elimination of loops in the interconnecting high voltage cable, e.g., reducing to a minimum any stray inductance. (p. 11, lines 8-30)

Applicants respectfully submit that this is a further explanation according to aspects of an embodiment of the inventions claimed in the above captioned application of the manner in which connectors in two adjacent modules 20 and 182 can interact. For the above stated reasons applicants respectfully request that the Examiner withdraw the objection to the Specification.

The Drawings were objected to as not showing certain features of the claimed invention. Applicants submit that the Drawings and the above noted disclosure in the Specification are clear and definite in the description of the operation of aspects of embodiments of the present invention as disclosed and claimed and the Examiner is respectfully requested to withdraw the objection to the Drawings. The Drawings have been amended to comport with the informal drawings as filed and accompanying this Response are copies of the Drawings as so amended showing the amendments in red.

The Examiner is respectfully requested to withdraw the objection to the Drawings.

Claims 1-6, 13-18, 25-30 and 37-39 stand rejected under 35 U.S.C. §102 (b) as anticipated by United States Patent No. 6237690, issued to Nicholson on May 29, 2001, entitled CONNECTOR ASSEMBLY, based upon an application Ser. No. 09/540,672 filed on March 31, 2000 ("Nicholson").

The Examiner has taken the position that Nicholson discloses:

an apparatus comprising: a high voltage connector (10) attached to at least a portion of the cable (11) on at least one end of the cable (11); a push through high voltage connector receptor (inside plug body 5, Column 6, 66-67) means within one module (3); and a disconnection mechanism (30) within the one module adapted to move the high voltage connector (10) and the at least a portion of cable (11) to which the high voltage connector is attached through the connector receptor (inside plug body 5; Column 6, 66-67) from a contact position to a housed position in a direction away from the other module (2) to which the high voltage connection is made. See Figs. 1-4 and 6.

Applicants respectfully submit that Nicholson and specifically the portion directly cited by the Examiner does not teach or suggest a “push through high voltage connector” as above described and as claimed. Nicholson discloses an ordinary male-female specifically described in the paragraph immediately preceding the portion to which the Examiner refers as having a “rear end wall 16.” This prevents from being a “push through” connector as that is described and claimed in the above captioned application with the advantages noted therein with respect to such connectors as applied to closely spaced modules. In addition the rear wall and the rest of the arrangement of Nicholson prevents it from being able to function to “move the high voltage connector ... through the connector receptor from a contact position to a housed position in a direction away from the other module ... .” The apparatus of Nicholson neither moves to a housed position “through the connector receptor” nor does it move to the housed position in a direction “away from” the adjacent module. also, as claimed, the connector and “at least a portion of the cable to which it is connected” passes through the receptor to the housed position in a direction away from the other module.

For the above stated reasons, the Examiner is respectfully requested to withdraw the rejections of claims 1, 13 and 25, and 37-39 and allow claims 1, 13, 25 and 37-39. Claims 2-12, 14-24 and 26-36 depend from allowable claims and should be allowed for that reason. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) In addition, the dependent claims 2-6, 14-18 and 26-30 are allowable for other reasons.

With regard to claims 2, 14 and 26, the Examiner has taken the position that Nicholson discloses:

an open connector (5) with a contacting surface (Column 6, 66-67) contained on the interior wall (Column 6, 66-67) of the cylindrical connector (5). See Figs. 1-4 and 6.

Applicants respectfully submit that the connector receptor of Nicholson which is not specifically described in Nicholson other than as a “contact sleeve ... internally of the plug body 5,” which receives the contact pin 10, is not the claimed “open cylindrical connector” nor does it have a “contacting surface on the interior of the cylindrical wall as disclosed and claimed in the above captioned application.

For the above stated reasons, the Examiner’s rejection of claims 2, 14 and 26 is improper and the Examiner is respectfully requested to withdraw the rejection and allow claims 2, 14 and 26.

As to claims 3-4, 15-16 and 27-30 (claims 29 and 30 have been cancelled) the Examiner has taken the position that Nicholson “discloses an interlock mechanism (means).” The Examiner has not identified the element in Nicholson that constitutes the “interlock mechanism (means)” and Applicants are unable to find in Nicholson the claimed “interlock mechanism in operative connection with the disconnection mechanism and adapted to provide an indication of the high voltage connector being in a position other than in the contact position ... .”

For the above stated reasons the Examiner’s rejection of claims 3-4, 15-16 and 27-28 are improper and the Examiner is respectfully requested to withdraw the rejection and allow claims 3-4, 15-16 and 27-28.

With respect to claims 5-6, and 17-18 the Examiner has taken the position that Nicholson discloses:

an engaging mechanism (back part of 6 where 11 is attached) engaging the cable (11) and holding the cable (11) in a fixed position relative to the disconnection mechanism (30) as the high voltage connector (10) moves from the contact position to the housed position. See Figs. 1-4 and 6

As indicated in Nicholson, Col. 6, lines 23-24, the element 30 is in the “spool body 3,” while the element 10 is in the separate “tubing hanger 2.” Even if Nicholson showed a push through connector, which it does not, the cable 11 is not, as the Examiner suggests, held in a fixed position relative to the disconnection mechanism as the high

voltage connector moves from the contact position to the housed position. To the extent that the connector in Nicholson is moved from a connected position to a housed position, the elements 2 and 3 are moving away from each other and no “fixed position relative to the disconnection mechanism” is maintained between any elements in respectively element 2 and element 3.

For the above stated reasons the Examiner’s rejection of claims 5-6 and 17-18 are improper and the Examiner is respectfully requested to withdraw the rejections of claims and allow 5-6 and 17-18.

Claims 7-12, 19-24 and 31-36 depend from allowable claims and for that reason the Examiner’s objection to claims 7-12, 19-24 and 31-36 is improper and Applicants respectfully request that the Examiner withdraw the objection to claims 7-12, 19-24 and 31-36 and allow claims 7-12, 19-24 and 31-36.

For the above stated reasons the Examiner’s rejection of the above referenced claims are improper and the Examiner is respectfully requested to withdraw the rejections and objection and allow claims 1-28 and 33-39 and allow claims 1-28 and 33-39.

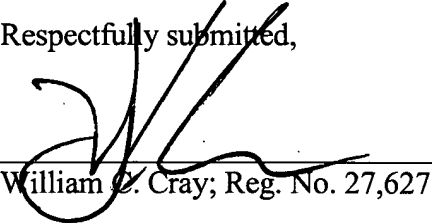
Claims 29-32 have been cancelled as containing redundant recitations already contained in claims 26-27 and 33-34. Claim 24 was amended to correct a typographical error in the dependence from claim 17 to claim 18. These amendments are not intended to nor do they have the effect of narrowing the scope of any claim remaining in the application and, if anything, the amendment of claim 24, in addition to being purely formal in correcting an obvious typographical error, broadens claim 24, since the recitations of claim 24 now cover something broader than was covered before, which was the same thing covered by claim 23 before the amendment of claim 24.

For the above stated reasons, newly added claims 40 – 73 should also be allowable and the Examiner is respectfully requested to allow claims 40-73, which eliminate an aspect of a claimed feature in the allowable claims 1-28 and 33-39, and are for that reason broader claims than the allowable claims 1-28 and 33-39, but also define over the prior art.

**Remarks**

For the above stated reasons claims 1-28 and 33-39 and 40-73 are allowable and the Examiner is respectfully requested to allow claims 1-28 and 33-39 and 40-73. The Commissioner is authorized to charge the Deposit Account of Applicants' assignee Cymer, Inc. for the required fee for prosecution of the added claims as designated on the Amendment Transmittal Letter included herewith.

Respectfully submitted,



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Enclosure: Submission of Proposed Drawing Amendment  
for Approval by Examiner and 8 sheets of  
annotated marked-up drawings

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